

Figure 1A

1	CATATTGCCAACTGAACCTCTCTGTTTTCTTGCAAGATGAAAGGAGACAACCATGAATG	60
1		M N E 3
61	AGCCACTAGACTATTTAGCAAATGCTTCTGATTTCCCCGATTATGCAGCTGCTTTTGGAA	120
4	P L D Y L A N A S D F P D Y A A A F G N	23
121	ATTGCACTGATGAAAACATCCCACTCAAGATGCACTACCTCCCTGTATTATTTATGGCATTA	180
24	C T D E N I P L K M H Y L P V I Y G I I	43
181	TCTTCCTCGTGGGATTTCCAGGCAATGCAGTAGTGATATCCACTTACATTTTCAAATGA	240
44	F L V G F P G N A V V I S T Y I F K M R	63
241	GACCTTGGAAGAGCAGCACCATCATTATGCTGAACCTGGCCTGCACAGATCTGCTGTATC	300
64	P W K S S T I I M L N L A C T D L L Y L	83
301	TGACCAGCCTCCCCTTCCTGATTCACTACTATGCCAGTGGCGAAAACCTGGATCTTTGGAG	360
84	T S L P F L I H Y Y A S G E N W I F G D	103
361	ATTCATGTGTAAGTTTATCCGCTTCAGCTTCCATTTCAACCTGTATAGCAGCATCCTCT	420
104	F M C K F I R F S F H F N L Y S S I L F	123
421	TCCTCACCTGTTTCAGCATCTTCCGCTACTGTGTGATCATTCACCCAATGAGCTGCTTTT	480
124	L T C F S I F R Y C V I I H P M S C F S	143
481	CCATTACAAAACCTCGATGTCAGTTGTAGCCTGTGCTGTGGTGTGGATCATTTCACTGG	540
144	I H K T R C A V V A C A V V W I I S L V	163
541	TAGCTGTCAATCCGATGACCTTCTTGATCACATCAACCAACAGGACCAACAGATCAGCCT	600
164	A V I P M T F L I T S T N R T N R S A C	183
601	GTCTCGACCTCACCAGTTCGGATGAACTCAATACTATTAAAGTGGTACAACCTGATTTTGA	660
184	L D L T S S D E L N T I K W Y N L I L T	203
661	CTGCAACTACTTTCTGCCTCCCCTTGGTGATAGTGACACTTTGCTATACCACGATTATCC	720
204	A T T F L P L V I V T L C Y T T I I H	223
721	ACACTCTGACCCATGGACTGCAAACCTGACAGCTGCCTTAAGCAGAAAGCACGAAGGCTAA	780
224	T L T H G L Q T D S C L K Q K A R R L T	243
781	CCATTCTGCTACTCCTTGCAATTTTACGTATGTTTTTTACCCTTCCATATCTTGAGGGTCA	840
244	I L L L L A F Y V F L P F H I L R V I	263

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Figure 1B

841	TTCGGATCGAATCTCGCCTGCTTTCAATCAGTTGTTCCATTGAGAATCAGATCCATGAAG	900
264	R I E S R L L S I S C S I E N Q I H E A	283
901	CTTACATCGTTTCTAGACCATTAGCTGCTCTGAACACCTTTGGTAACCTGTTACTATATG	960
284	<u>Y I V S R P L A A L N T F G N L L L Y V</u>	303
961	TGGTGGTCAGCGACAACCTTTCAGCAGGCTGTCTGCTCAACAGTGAGATGCAAAGTAAGCG	1020
304	<u>V V</u> S D N F Q Q A V C S T V R C K V S G	323
1021	GGAACCTTGAGCAAGCAAAGAAAATTAGTTACTCAAACAACCCTTGAAATATTTTCATTTA	1080
324	N L E Q A K K I S Y S N N P	337
1081	C	1081

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Figure 2A

P2YR_CHICK MTEALISAALNCTQPELLAG.G..W.....AAGNATTTCSLTKTKGFQ
 P2YR_MELGA MTEALISAALNCTQPELLAG.G..W.....AAGNASTKCSLTTKTKGFQ
 P2YR_MOUSE MTEVPWSVVPNCTDAAFLAGLGLSLWGNSTVAATAAVSSSFQCALTKTKGFQ
 P2YR_RAT MTEVPWSAVPNCTDAAFLAGLGLSLWGNSTIAATAAVSSSFQCALIKTKGFQ
 P2YR_BOVIN MTEVLWPAVPNCTDAFLADPGSPWGNSTVTATAAVASPFQCALTKTKGFQ
 P2YR_HUMAN MTEVLWPAVPNCTDAAFLAGPGSSWGNSTVAATAAVSSSFQCALTKTKGFQ
 O35811 ~~~~~MTSAESLFTS.LGP.SPSSGDG.....DCRFNE.EFK
 P2Y4_HUMAN ~~~~~MSTESSLLRS.LGL.SPGPCSEVEL...DCWFDE.DFK
 O57466 ~~~~~MDAPVRMFLAPWTPPTP.TP.LGGNTIAAAEA...KCVFNE.EFK
 P2Y8_XENLA ~~~~~MTEDIMATGYPTFLTPYLPMLKLLMNLNDTED...ICVFDE.GFK
 P2UR_RAT ~~~~~AAGLDSNINSTINGWEDDELGYKCRFNE.DFK
 P2Y3_CHICK ~~~~~MSMANFTGGRNSCTFHE.EFK
 HGPRBMY23 ~~~~~MNEPLDLANASDFPDYAAAFGNCIDENIPLK

P2YR_CHICK FYYLPTVYIVFETGFLGNSVAI.WFVFMHMPWSCI.VYMFNLALADEFL
 P2YR_MELGA FYYLPTVYIVFETGFLGNSVAI.WFVFMHMPWSCI.VYMFNLALADEFL
 P2YR_MOUSE FYYLPAVYIVFETGFLGNSVAI.WFVFMHMPWSCI.VYMFNLALADEFL
 P2YR_RAT FYYLPAVYIVFETGFLGNSVAI.WFVFMHMPWSCI.VYMFNLALADEFL
 P2YR_BOVIN FYYLPAVYIVFETGFLGNSVAI.WFVFMHMPWSCI.VYMFNLALADEFL
 P2YR_HUMAN FYYLPAVYIVFETGFLGNSVAI.WFVFMHMPWSCI.VYMFNLALADEFL
 O35811 FILLPNSYAVVFVGLALNAPT.WEFFFRRPWDATATYMFHLALSCTL
 P2Y4_HUMAN FILLPSYAVVFVGLGLNAPT.WEFFFRRPWDATATYMFHLALSCTL
 O57466 FILLPSYGVVFVGLPLNSVAI.WFVFMHMPWSCI.VYMFNLALADEFL
 P2Y8_XENLA FILLPSYSAVELVGLPLNIAAI.WFVFMHMPWNPV.VYMFNLALSCTL
 P2UR_RAT FVLLPSYGVVFVGLCLNVVAI.WFVFMHMPWNPV.VYMFHLALSCTL
 P2Y3_CHICK QVLLPSYGVVFVGLPLNAVVGQVAAI.WFVFMHMPWNPV.VYMFNLALADEFL
 HGPRBMY23 MHYLPVYGVVFVGLGPGNAVVIS.TYFVFMHMPWKSCTIMNLACTDL

P2YR_CHICK YVLLPALIYYFVKTDWIFGDMCKLORF.FHVNLYGSILFLTCISVHR
 P2YR_MELGA YVLLPALIYYFVKTDWIFGDMCKLORF.FHVNLYGSILFLTCISVHR
 P2YR_MOUSE YVLLPALIYYFVKTDWIFGDAMCKLORF.FHVNLYGSILFLTCISAHR
 P2YR_RAT YVLLPALIYYFVKTDWIFGDMCKLORF.FHVNLYGSILFLTCISAHR
 P2YR_BOVIN YVLLPALIYYFVKTDWIFGDAMCKLORF.FHVNLYGSILFLTCISAHR
 P2YR_HUMAN YVLLPALIYYFVKTDWIFGDAMCKLORF.FHVNLYGSILFLTCISAHR
 O35811 YVLSLPTLIYYAAHNHPEFGTECKFRF.FYWNLYCSILFLTCISVHR
 P2Y4_HUMAN YVLSLPTLIYYAAHNHPEFGTECKFRF.FYWNLYCSILFLTCISVHR
 O57466 YVLSLPTLIYYADKNNHPEFGVCKLRF.FYANLYSSILFLTCISVHR
 P2Y8_XENLA YVLSLPTLIYYADKNNHPEFGVCKLRF.FYANLYSSILFLTCISVHR
 P2UR_RAT YVLSLPTLIYYADKNNHPEFGVCKLRF.FYANLYSSILFLTCISVHR
 P2Y3_CHICK YVLSLPTLIYYADKNNHPEFGVCKLRF.FYANLYSSILFLTCISVHR
 HGPRBMY23 YVLSLPTLIYYADKNNHPEFGVCKLRF.FYANLYSSILFLTCISVHR

P2YR_CHICK YTGVPHPISLGRK.KKNAYYSSLVWLVVAV.IAPFLFSGTGVRN
 P2YR_MELGA YTGVPHPISLGRK.KKNAYYSSLVWLVVAV.IAPFLFSGTGVRN
 P2YR_MOUSE YSGVVPPLSLGRK.KKNAYYSSLVWLVVAV.IAPFLFSGTGVRN
 P2YR_RAT YSGVVPPLSLGRK.KKNAYYSSLVWLVVAV.IAPFLFSGTGVRN
 P2YR_BOVIN YSGVVPPLSLGRK.KKNAYYSSLVWLVVAV.IAPFLFSGTGVRN
 P2YR_HUMAN YSGVVPPLSLGRK.KKNAYYSSLVWLVVAV.IAPFLFSGTGVRN
 O35811 YLGCCHPLRALRWGR.PRIAGLCHAVW.VVACCTVPNLFFVITNANGT
 P2Y4_HUMAN YLGCCHPLRALRWGR.PRIAGLCHAVW.VVACCTVPNLFFVITNANGT
 O57466 YLGCCHPLRALRWGR.PRIAGLCHAVW.VVACCTVPNLFFVITNANGT
 P2Y8_XENLA YRGVCHPETSLSRGN.AKHAYVCAVW.VVACCTVPNLFFVITNANGT
 P2UR_RAT YLGCCHPLRALRWGR.PRIAGLCHAVW.VVACCTVPNLFFVITNANGT
 P2Y3_CHICK YLGCCHPLRALRWGR.PRIAGLCHAVW.VVACCTVPNLFFVITNANGT
 HGPRBMY23 YLGCCHPLRALRWGR.PRIAGLCHAVW.VVACCTVPNLFFVITNANGT

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Figure 2B

P2YR_CHICK TITCYDTTADEYLRSYFVYSNCTTVFVFCPEFVILGCVGLIYRALIYY
 P2YR_MELGA TITCYDTTADEYLRSYFVYSNCTTVFVFCPEFVILGCVGLIYRALIYY
 P2YR_MOUSE TITCYDTTSMYLRSYFIYSNCTTVAFVFCPEFVILGCVGLIYRALIYN
 P2YR_RAT TITCYDTSDEYLRSYFIYSNCTTVAFVFCPEFVILGCVGLIYRALIYY
 P2YR_BOVIN TITCYDTSDEYLRSYFIYSNCTTVAFVFCPEFVILGCVGLIYRALIYY
 P2YR_HUMAN TITCYDTSDEYLRSYFIYSNCTTVAFVFCPEFVILGCVGLIYRALIYY
 O35811 TITCHDITTLPEEFDHYVYSSAAMVLEFGPEFTLVICYGLMARRLYR.
 P2Y4_HUMAN TVTCHDITRPEEFDHYVHSSAAMGLEFGPEFTLVICYGLMARRLYQ.
 O57466 STTCHDITKPEEFDHYVHYSSAMALEFGPEFTLVICYGLMARRLCKE
 P2Y8_XENLA NITCHDITRPEDFARYVEYSTAMCLEFGPEFTIASCYGLMTRRELKXP
 P2UR_RAT TITCHDTSARELFSHVAVYSSVNLGLETAPEFSTELVCYVLMARRLKPK
 P2Y3_CHICK RTVICYDLSPPRSTSYFPYGTITTTTGTGLPFAAILACYCSMARILCO
 HGPRBMY23 TGSACLELISSEELNLIKWYNITATTECPLEATYTLCTTITHTLTH.

P2YR_CHICK DITN....SPLRRKSIYLIIVLTVFVAVSPFHVKTNLRLRDLDFOT
 P2YR_MELGA DITN....SPLRRKSIYLIIVLTVFVAVSPFHVKTNLRLRDLDFOT
 P2YR_MOUSE DITN....SPLRRKSIYLIIVLTVFVAVSPFHVKTNLRLRDLDFOT
 P2YR_RAT DITN....SPLRRKSIYLIIVLTVFVAVSPFHVKTNLRLRDLDFOT
 P2YR_BOVIN DITN....SPLRRKSIYLIIVLTVFVAVSPFHVKTNLRLRDLDFOT
 P2YR_HUMAN DITN....SPLRRKSIYLIIVLTVFVAVSPFHVKTNLRLRDLDFOT
 O35811 ..PLPGAGQSSRLSINTHIAVLTVFVAVCFPFHITTYYYQAR.LLEA
 P2Y4_HUMAN ..PLPGSAQSSRLSINTHIAVLTVFVAVCFPFHITTYYYLAR.LLEA
 O57466 SFPSPSPRVPSYSSITLIIVLTVFVAVCFPFHITTYYYTSR.YFOA
 P2Y8_XENLA IISGNQQTLPSSYKSTTHIEVIAFAVCFPFHITTYYYAR.LLGI
 P2UR_RAT AYGTG..LPRAARKSVITHAIVLAVFAVCFPFHVTTYYSFR.SLDL
 P2Y3_CHICK D..LIGLAVHKKYKRAMITLIIVIVFSSFPFPHITKTYLIVRSSASL
 HGPRBMY23GLQTDSCLEOKARLTITALLAFVCFPFHITTYVIRRESRL...L

P2YR_CHICK POMCAFNDKVYATYQVTRGLASLNSCDPILYFLAGDT...FRRRLSRAT
 P2YR_MELGA POMCAFNDKVYATYQVTRGLASLNSCDPILYFLAGDT...FRRRLSRAT
 P2YR_MOUSE PEMCDFNDRVYATYQVTRGLASLNSCDPILYFLAGDT...FRRRLSRAT
 P2YR_RAT PEMCDFNDRVYATYQVTRGLASLNSCDPILYFLAGDT...FRRRLSRAT
 P2YR_BOVIN PEMCAFNDRVYATYQVTRGLASLNSCDPILYFLAGDT...FRRRLSRAT
 P2YR_HUMAN PAMCAFNDRVYATYQVTRGLASLNSCDPILYFLAGDT...FRRRLSRAT
 O35811 D..CHVLIIVNVVYKVTRPLASANSCHDELYLFTGD...KERNQLQQLC
 P2Y4_HUMAN D..CRVLIIVNVVYKVTRPLASANSCHDELYLITGD...KREFQLRQLC
 O57466 D..COTLMIINFTYKTRPLASANSCHDPILYFLAGD...KRGRLR...
 P2Y8_XENLA K..CYALVIVNVYKVTRPLASANSCHDPILYFLAND...RERRRLITV
 P2UR_RAT S..CHTLNAINMAYKTRPLASANSCHDPILYFLAGQRLVRFARDAKPAT
 P2Y3_CHICK E..CPTLCAFAIAYKTRPLASANSCHDPILYFT...QRKFRESTRYLL
 HGPRBMY23 SISCSIEHQHEAYIVRPLAALNIFGNLELYVVSINFPQAVCSTVRCK

P2YR_CHICK RKSS.....RRSEPNVQSSEMTLNLTEYKQNGDS
 P2YR_MELGA RKSS.....RRSEPNVQSSEMTLNLTEYKQNGDS
 P2YR_MOUSE RKAS.....RRSEANLQSSEMTLNLSEFKQNGDS
 P2YR_RAT RKAS.....RRSEANLQSSEMTLNLSEFKQNGDS
 P2YR_BOVIN RKAS.....RRSEANLQSSEMTLNLSEFKQNGDS
 P2YR_HUMAN RKAS.....RRSEANLQSSEMTLNLSEFKQNGDS
 O35811 ..RGSKPK.....PRTAA...SS..LALVTLHEPISRWADTHQDSTF
 P2Y4_HUMAN ..GGGKPQ.....PRTAA...SS..LALVSLPECSSCRWAATPDSSC
 O57466 ..RGAAQR.....PRPVP...TS..LALVSPSVDSVVGSCCNSESERG
 P2Y8_XENLA RRRSSVPNRRCMHTHPOTEPHMTAGLPVIS.AEIPSNNGSMV.RDENG
 P2UR_RAT EPTSPQARRRLGLHRPNITTRKD....LSISSDERRTESTPAGSET
 P2Y3_CHICK DKMSKWRQDHCISYGS
 HGPRBMY23 VSGNLEQAKKISYNNP

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Figure 2C

P2YR_CHICK ~~~~~
P2YR_MELGA ~~~~~
P2YR_MOUSE ~~~~~
P2YR_RAT ~~~~~
P2YR_BOVIN ~~~~~
P2YR_HUMAN ~~~~~
O35811 SAYEGDRL ~~~~~
P2Y4_HUMAN STPRADRL ~~~~~
O57466 MGTVWSRGGQ ~~~~~
P2Y8_XENLA EGSREHRVEWTDTKKEINQMMNRRSTIKRNSTDKNMDKENRHGENYLPYVE
P2UR_RAT KDIRL ~~~~~
P2Y3_CHICK ~~~~~
HGPRBMY23 ~~~~~

P2YR_CHICK ~~~~~
P2YR_MELGA ~~~~~
P2YR_MOUSE ~~~~~
P2YR_RAT ~~~~~
P2YR_BOVIN ~~~~~
P2YR_HUMAN ~~~~~
O35811 ~~~~~
P2Y4_HUMAN ~~~~~
O57466 ~~~~~
P2Y8_XENLA VVEKEDYETKRENRRKTTQSSKTNAEQDELOTQIDSRLKRGKWQLSSKKG
P2UR_RAT ~~~~~
P2Y3_CHICK ~~~~~
HGPRBMY23 ~~~~~

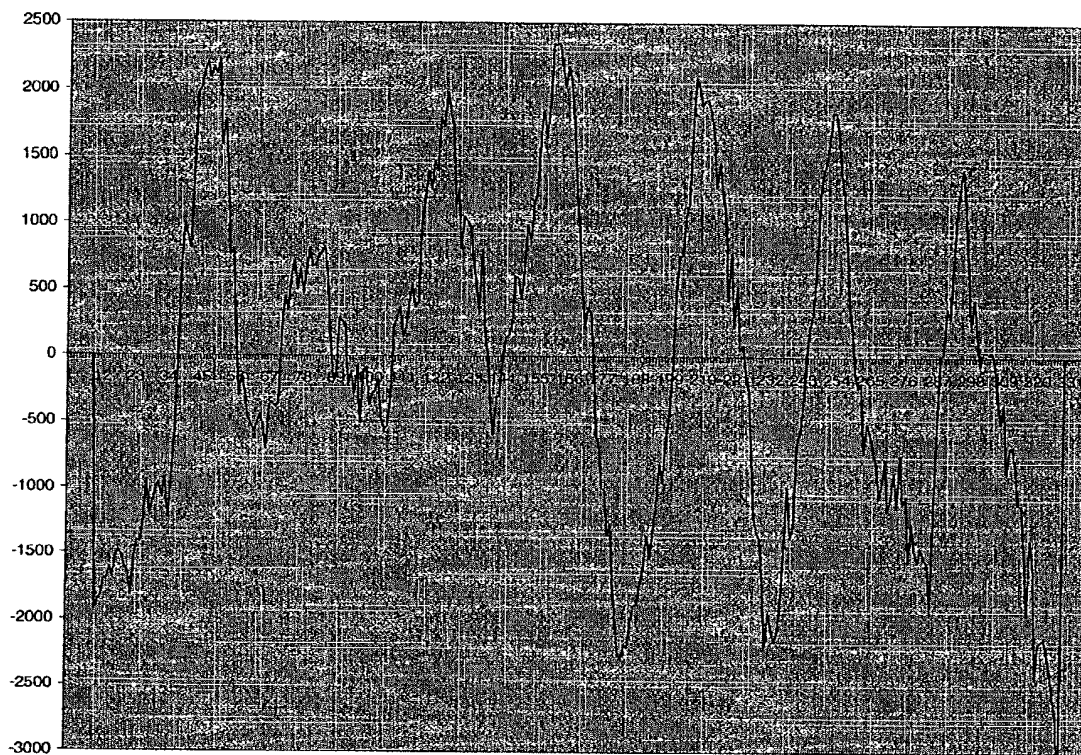
P2YR_CHICK ~~~~~
P2YR_MELGA ~~~~~
P2YR_MOUSE ~~~~~
P2YR_RAT ~~~~~
P2YR_BOVIN ~~~~~
P2YR_HUMAN ~~~~~
O35811 ~~~~~
P2Y4_HUMAN ~~~~~
O57466 ~~~~~
P2Y8_XENLA AAQENEKGHMEPSFEGETSTWNLLTPKMYGKKDRLAKNVEEVGYGKEKE
P2UR_RAT ~~~~~
P2Y3_CHICK ~~~~~
HGPRBMY23 ~~~~~

P2YR_CHICK ~~~~~
P2YR_MELGA ~~~~~
P2YR_MOUSE ~~~~~
P2YR_RAT ~~~~~
P2YR_BOVIN ~~~~~
P2YR_HUMAN ~~~~~
O35811 ~~~~~
P2Y4_HUMAN ~~~~~
O57466 ~~~~~
P2Y8_XENLA LQNFPA
P2UR_RAT ~~~~~
P2Y3_CHICK ~~~~~
HGPRBMY23 ~~~~~

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D0077 NP

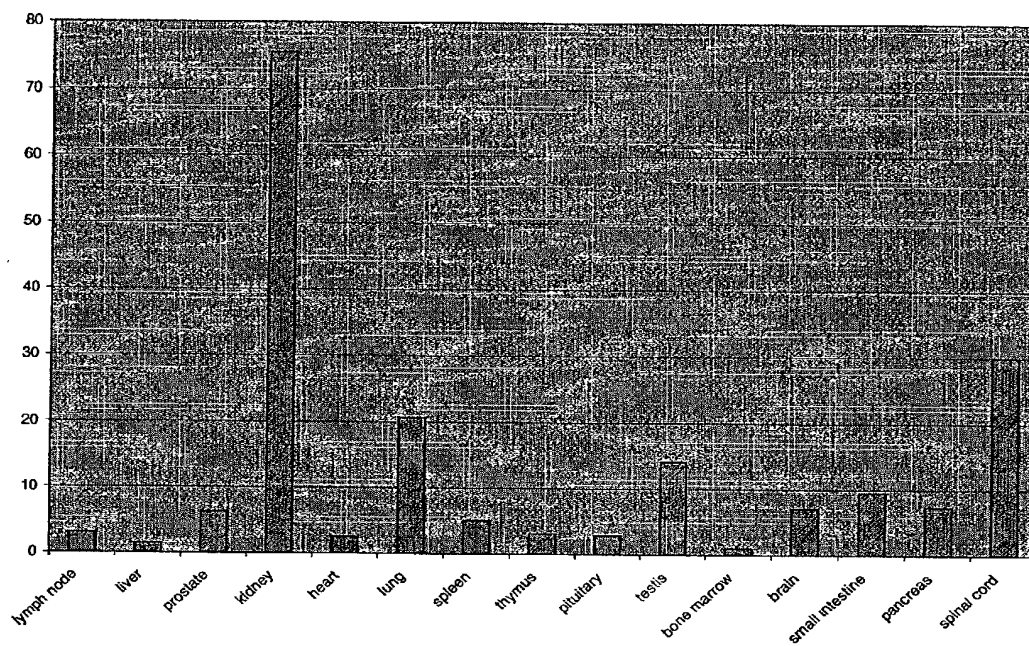
Figure 3



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D0077 NP

Figure 4



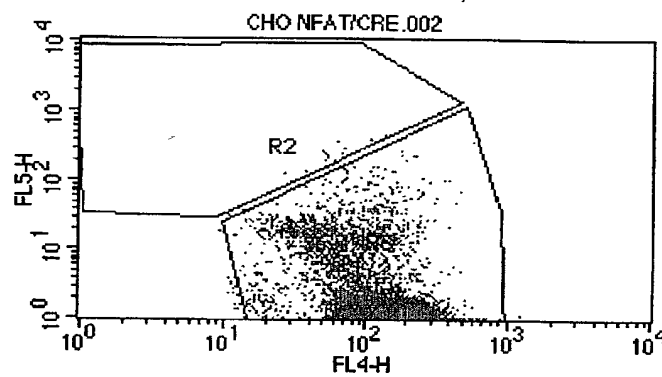
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Figure 5.

<u>Protein</u>	<u>SWISS-PROT ACCESSION No</u>	<u>Identities</u>	<u>Similarities</u>
Chick purinergic receptor	P34996	36%	46%
Turkey purinergic receptor	P49652	36%	46%
Mouse purinergic receptor	P49650	36%	45%
Rat purinergic receptor	P49651	36%	45%
Bovine purinergic receptor	P48042	35%	46%
African clawed frog P2Y purinoceptor 8	P79918	35%	46%
Chick P2Ypurinoceptor 3	Q98907	35%	45%
Human purinergic receptor	P47900	34%	45%
Turkey G-protein coupled P2Y nucleotide receptor	O57466	34%	44%
Human uridine nucleotide receptor	P51582	32%	40%
Rat G-protein coupled receptor	O35811	31%	41%
Rat P2U purinergic receptor	P41242	30%	40%

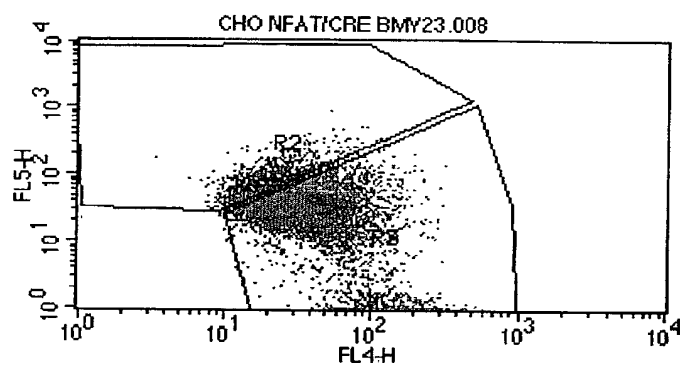
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Figure 6.



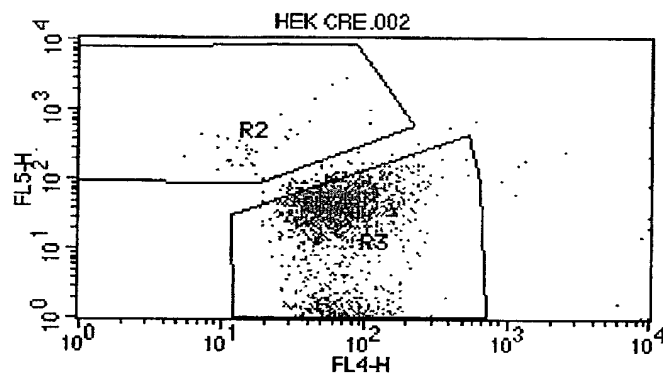
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Figure 7.



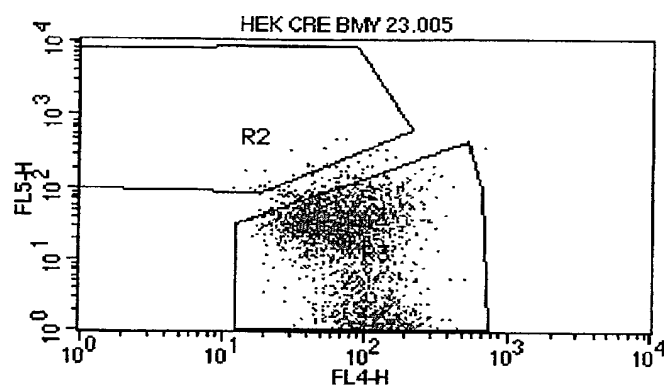
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Figure 8.



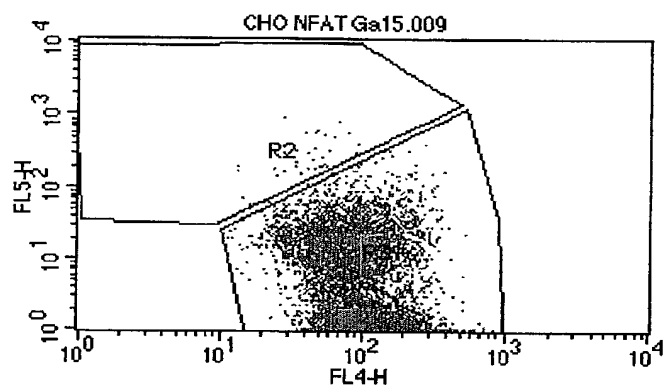
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Figure 9.



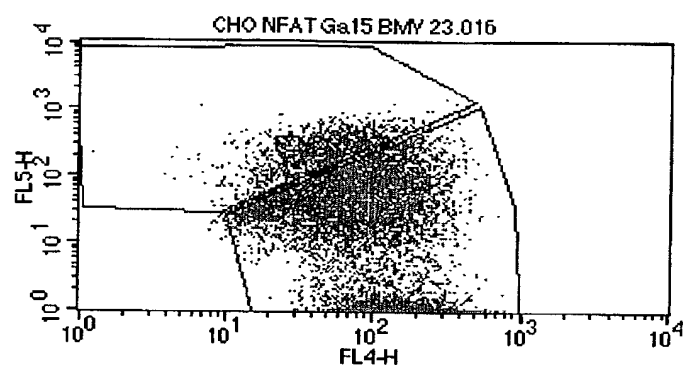
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Figure 10.



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Figure 11.

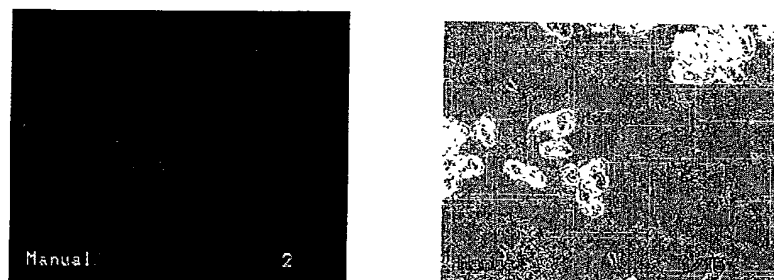


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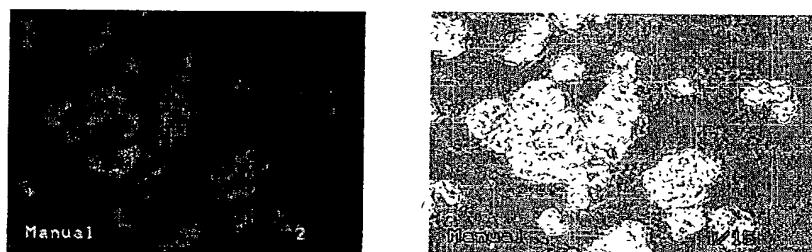
D0077 NP

Figure 12.

Cho NFAT Ga15 Control (Fluorescent vs. Bright Field)



Cho NFAT Ga15 BMY23 (Fluorescent vs. Bright Field)

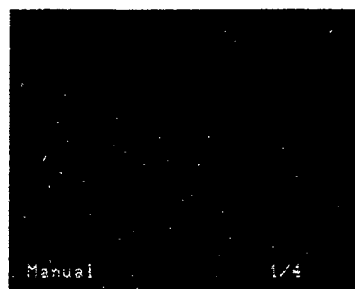


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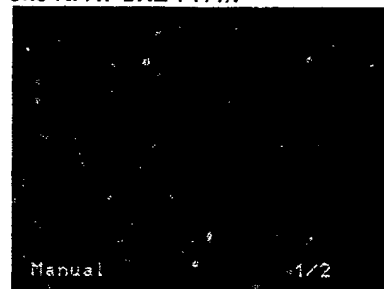
D0077 NP

Figure 13.

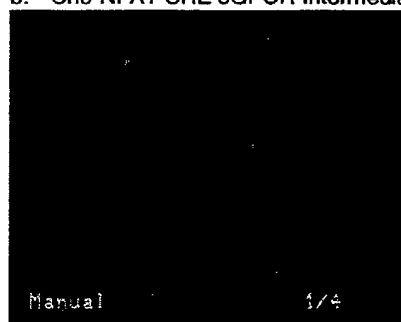
a. Cho-NFAT CRE



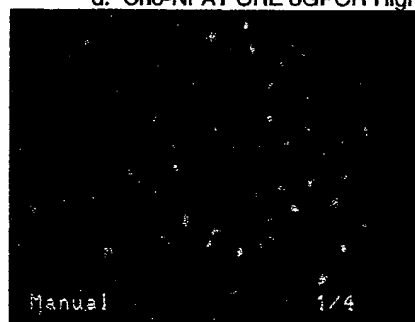
b. Cho-NFAT CRE + F/T/P



b. Cho-NFAT CRE oGPCR-Intermediate



d. Cho-NFAT CRE oGPCR High



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